

# localnews

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## LIVING

# Species everywhere – for now

## Kawarthas boast spectacular biodiversity that brings economic, cultural benefits

This year, 2010, is the International Year of Biodiversity. Coming from 'biological diversity,' biodiversity is the term given to the amazing variety of life on Earth. It forms the web of life of which humans are an integral part and upon which we so fully depend. The biodiversity we see and continue to enjoy today is the result of billions of years of evolution. It was and continues to be shaped by myriad natural processes and, increasingly, by the influence of humans. Biodiversity is best understood in terms of the stunning variety of plants, animals, fungi, and microorganisms that exist on this planet. We don't even know how many different species are out there. So far, about 1.75 million have been identified, mostly small creatures such as invertebrates. However, scientists estimate that there could be as many as three million to 100 million!



**Drew Monkman**  
OUR CHANGING SEASONS

Biodiversity also includes genetic differences within each species. Examples include differences between varieties of potatoes or between the eastern population of song sparrows and the Alaska population. The uniqueness of each individual, sub-species, and species is determined by its DNA, genes, and chromosomes – the building blocks of life.

It is also useful to think of biodiversity in terms of the variety of ecosystems that exist. These include deserts, oceans, wetlands, coniferous forests, deciduous forests, mountains, lakes, rivers, agricultural landscapes, and even cities. Each ecosystem forms a dynamic complex of plant, animal and micro-organism communities.

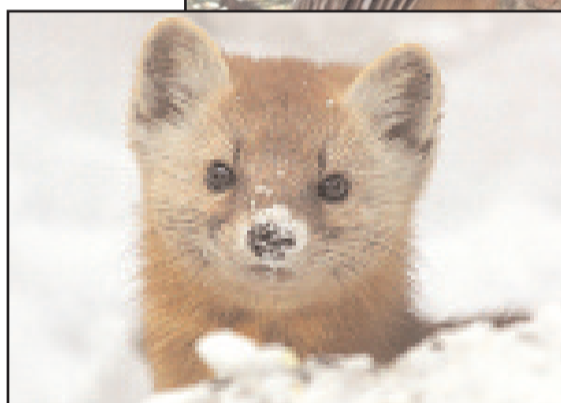
We rarely stop to think that biodiversity provides humankind with a huge number of "goods and services." These biological resources sustain our lives and form the pillars upon which we have built our civilizations. A very preliminary list would include the provision of food, fuel, fibre, shelter and building materials; the pollination of plants, including many crops; the control of pests; the purification of air and water; protection from floods; erosion control; the stabilization of Earth's climate; the generation of soil fertility; the maintenance of genetic resources as key inputs to crop and livestock varieties; and the huge variety of cultural and aesthetic benefits.

In Africa, nature-based tourism generates approximately the same amount of revenue as farming, forestry and fisheries combined. Likewise, Australia's Great Barrier Reef is estimated to contribute nearly \$6 billion Aus to the country's economy from tourism, other recreational activities and commercial fishing. Natural areas and the species they support are crucially important for long-term economic success and for the physical and emotional well being of society in general. When we lose green space, we lose opportunities.

Peterborough County and the Kawarthas still enjoy a rich heritage of biodiversity. It is one of the main reasons why so many people, baby-boomers in particular, are moving to the countryside and lakeshores in search of a lifestyle that is less stressful, slower-paced, and with better access to the natural environment and outdoor recreational activities. The baby-



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Examples of the diverse number and type of species found in Peterborough County and the Kawarthas include (clockwise from top) the northern saw-whet owl, maiden-hair fern, green comma butterfly and pine marten.

boomer cohort brings significant purchasing power for local economies. A recent report by the Canadian Urban Institute and the Natural Spaces Leadership Alliance states that communities that can provide an integrated approach to the economy and the natural environment will be poised to benefit from the competitive advantage of quality of life in attracting retired baby-boomers.

Unfortunately, the ecosystems or "natural capital" that surround our communities are an asset that we still take for granted. According to the National Roundtable on the Environment and Economy, "we neither understand the true value of ecosystem services or what it would cost to replace them...not understanding these costs and benefits is compromising our ability to make decisions about the balance between nature conservation and industrial development."

In addition to the more concrete goods and services provided by ecosystems and the diverse species that inhabit them, I believe that active interaction with nature – or even passive contemplation, for that matter – is essential for human well-being. Humans evolved in the company of other living organisms, and we contin-

ue to rely physically, intellectually, emotionally, and spiritually on connecting with the natural world – for example, it's well-known that the presence of trees in cities encourages people to come out of their homes to experience public open space. Other lifeforms fulfill a psychic as much as a physical need. The theologian and cosmologist, Thomas Berry, writing in *The Dream of the Earth* believed: "If we have powers of imagination, these are activated by the magic display of color and sound, of form and movement, such as we observe in the clouds of the sky, the trees and bushes and flowers, the waters and the wind, the singing birds, and the movement of the great blue whale through the sea. If we have words to speak and think and commune, words for the inner experience of the divine...it is again because of the impressions we have received from the variety of beings about us. If we lived on the moon, our imagination and our sense of the divine would all reflect the desolation of the lunar landscape."

Peterborough County is blessed with at least 1,200 species of vascular plants that includes everything from ferns and club mosses to wildflowers and maple trees. There are 55 species of mammals,

160 breeding birds, 17 amphibians, 16 reptiles, 96 butterflies, 29 damselflies, and 55 dragonflies.

The mix of Canadian Shield country, Great Lakes-St. Lawrence Lowlands, and our many water courses gives Peterborough County one of the richest assortments of habitat types and ecosystems in Ontario. These include mixed northern forests, largely deciduous southern woodlots, alvars (largely open expanses of flat, surface limestone), abandoned farmland, agricultural land, and a variety of wetland types. More localized habitats include the botanically rich Cavan Bog, located in a glacial lake bottom; Petroglyphs Provincial Park, which not only has affinities with Algonquin Park but is also home to Ontario's only lizard, the rare five-lined skink; Kawartha Highlands Provincial Park, whose extensive areas of bare rock are still provide nesting habitat to nighthawks and whip-poor-wills; the Warsaw Caves, with its interesting geological features and high diversity of ferns; and even a few small remnants of native tallgrass prairie along the north shore of Rice Lake. With such a variety of habitats, the diversity of plants and animals we enjoy is one of the most extensive in the province. Some species, like black

spruce, moose, and grey jays, are more typical of northern Ontario; others, like bitternut hickory, opossum, and cerulean warbler, are more characteristic of southern Ontario.

Our knowledge of Peterborough County's biodiversity can be attributed to many factors. The late Doug Sadler, who was probably Peterborough's best known naturalist and nature writer, often spoke of the momentous changes in attitudes towards nature that have occurred here since he first arrived in the area in the early 1950s. He remembers that the public at that time was only marginally interested in natural history and that it took quite a while for his nature column, *Come With Me Quietly*, to earn a readership.

The Peterborough Field Naturalists evolved into a much more active organization than the original Peterborough Nature Club. Among many other endeavours, the members organized three different Christmas Bird Counts each year and also participated in the Ontario Breeding Bird Atlas. The atlas experience opened the eyes of even long-time members to local natural areas that most of us hardly new even existed. At about this same time, Sadler wrote *Our Heritage of Birds*, which was the first comprehensive account of local bird species ever published. It sold an impressive 3,500 copies and was later followed by Geoff Carpentier's *The Mammals of Peterborough County*.

Other players, too, have played a crucial role in bringing to light more about our area's biodiversity. Since Trent University arrived in the mid-1960s, experts in a host of different environmental disciplines different disciplines have contributed immensely. The coming of the Ontario Ministry of Natural Resources (OMNR) has had an equally important influence. Many of Canada's leading authorities in everything from black bears to dragonflies now live and work in the Peterborough area and represent a treasure trove of knowledge. Peterborough has been especially fortunate to be home to the Natural History Information Centre (NHIC), which is a joint venture between OMNR and the Nature Conservancy of Canada, the Natural Heritage League and the Nature Conservancy. The mission of NHIC is to compile, maintain, and distribute information on natural species, plant communities and spaces of conservation concern in Ontario. NHIC brings together a talented team of ecologists, botanists, herpetologists, zoologists, and information technicians. The knowledge of local biodiversity that members of the Peterborough Field Naturalists now possess is in no small part due to the continued involvement in the club of so many knowledgeable people from Trent, OMNR, and NHIC. Finally, the popularity of the Kawarthas as a place to retire "close to nature" means that a steady stream of individuals with a personal interest in different areas of natural history are drawn to this area in their retirement years. These people, too, are continually adding to what we know of Peterborough County's biodiversity.

Next week, I'll try to provide an overview of the impressive diversity of mammals, birds, reptiles, amphibians, fish, invertebrates, and plants that are found here.

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